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(54) Title: COSMETIC COMPOSITION CONTAINING AN ANTIPERSPIRANT OR DEODORANT AND A MOISTURISING CREAM		
(57) Abstract An antiperspirant or deodorant cosmetic composition suitable for topical application to the human skin, comprising: i) an antiperspirant or deodorant active; ii) a moisturising cream; and optionally iii) a carrier for the antiperspirant or deodorant active.		

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COSMETIC COMPOSITION CONTAINING AN ANTIPERSPIRANT OR DEODORANT AND A MOISTURISING CREAM

The invention relates to antiperspirant or deodorant compositions, but in particular to antiperspirant compositions, comprising a moisturising cream suitable for topical application to human skin.

The deodorant and antiperspirant market is dominated with products based on aluminium or zirconium salts which are intended to prevent, or at least control, perspiration at the skin surface, particularly on the underarm, whilst often simultaneously providing a perceived degree of deodorancy.

Antiperspirant and deodorant compositions are utilised in many product forms e.g. roll-ons, creams, sticks, aerosols and pump sprays. However all forms suffer from a number of common disadvantages.

A principal disadvantage of many deodorants and antiperspirants is their perceived skin unfriendliness. More particularly, the presence of volatile carriers such as volatile silicones and ethanol, and indeed deodorant and antiperspirant actives is perceived to have a drying and tightening effect on a user's skin following application, resulting in dry skin, reduced skin elasticity and an unpleasant skin sensation.

Many deodorants and antiperspirants can also result in a stinging sensation on the skin following application due to the presence of astringent, skin drying materials such as ethanol. Stinging is a particularly problematic when a deodorant or antiperspirant is applied following shaving.

The above disadvantages deter many consumers from utilising deodorants and antiperspirants thereby depriving the consumer of the benefits to be derived from such cosmetics.

An object of the invention is to provide such a composition which has excellent antiperspirant or deodorant efficacy, excellent cosmetic properties and aesthetics such as comfort in use, smoothness on application, and non-skin drying. The moisturising cream in the composition may also provide moisturising effect.

A further object of the invention is to provide a deodorant or antiperspirant composition which also exhibits reduced stinging upon application, and has low irritation potential.

According to the invention there is provided a antiperspirant or deodorant cosmetic composition suitable for topical application to the human skin, comprising:

- i. an antiperspirant or deodorant active;
- ii. a moisturising cream; and optionally
- iii. a carrier for the antiperspirant or deodorant active.

Preferably, an antiperspirant active comprises 5-25% by weight of the composition. Normally the antiperspirant or deodorant composition will additionally comprise a carrier for the antiperspirant or deodorant active, though it is envisaged in certain circumstances, in particular in a cream product formulation, that the composition may comprise a moisturising cream base in which is dissolved or suspended the antiperspirant or deodorant active.

It is a highly preferred aspect of the invention that the composition is an antiperspirant one, in particular one in which the antiperspirant active is based on either aluminium or aluminium/zirconium salts. It has surprisingly been found that moisturizing creams can be combined with antiperspirant actives in topical compositions to provide compositions which are stable.

In certain preferred embodiments, the moisturising cream is a carrier for the active. Also in certain embodiments, the cream can comprise at least 25% by weight of the composition.

5 In a preferred embodiment, the composition does not contain short chain monohydric alcohols, in particular ethanol, which may be responsible for stinging of the antiperspirant or deodorant compositions, as well as contributing to the drying of the skin.

10

In another aspect of the invention, there is provided an antiperspirant composition comprising an antiperspirant active, a volatile carrier for the active and a moisturising cream. Also in certain embodiments, the moisturising cream
15 comprises a non-volatile carrier for the antiperspirant carrier.

Advantageously, the composition comprises non-volatile emollients.

20

In a preferred embodiment, and in particular for cream, roll-on or pump spray product forms, the invention provides an antiperspirant or deodorant composition suitable for topical application to the human skin, comprising:

- 25 i. 1-25% by weight of the total composition of an antiperspirant or deodorant active;
- ii. 1 to 90% (more preferably 5 to 80%) by weight of the total composition of water; and
- iii. 0.1 to 95% (more preferably 5 to 30%) by weight of
30 a moisturising cream.

The moisturising cream component of the compositions according to the invention may comprise an hygroscopic material known as humectant, which may be preferably a polyol
35 or an alcohol, and may be present at a level of 0.1 to 50%,

preferably 0.1-30%, more preferably 1 to 30%, most preferably 1.5 to 10% by weight of the total composition.

5 It is a highly preferred aspect of the invention that the composition comprises water. The composition may conveniently comprise at least 40% water, preferably at least 50% water. Preferably the composition comprises less than 85% water.

10 Advantageously the moisturising cream comprises a humectant. Humectants are well known in the art, and are cosmetic ingredients intended to increase the water content of the top layers of the skin. This group of ingredients includes primarily hygroscopic agents employed for this specific
15 purpose. Humectants of particular interest for the present invention are polyols and alcohols such as sorbitol, glycerol, ethylene glycol, propylene glycol or mixtures thereof. Preferably, the humectant contains a hydroxyl group.

20 When the composition does contain water, it is highly preferred that the composition additionally comprises a surfactant and a hydrophobic phase. Additional preferred ingredients include emollients, and optionally volatile
25 silicones. In particular in such compositions, it is preferred that the hydrophobic phase comprises as little as possible of materials which can dry the skin. In particular, the composition may be configured such that it contains a level of volatile silicone which is sufficiently low so as
30 not to cause drying out of the skin.

Surprisingly, we have found that a moisturising cream can be incorporated into an antiperspirant or deodorant cosmetic composition to produce an antiperspirant or deodorant
35 composition which has improved and attractive cosmetic characteristics expected of such compositions as well as

excellent efficacy, low irritation potential and non-stinging upon application.

Therefore, the invention provides an antiperspirant or
5 deodorant compositions which exhibit excellent wetness or
odour control, but simultaneously contain a cream which
moisturises the stratum corneum. This is contrary to what
would be expected especially with antiperspirant
10 compositions, where the aim is to prevent moisture loss from
the skin.

Preferably, the moisturising cream in the compositions
according to the invention can be a solid or a semi-solid
15 emulsion, although the term can equally be applied to non-
aqueous products such as wax-solvent based products and
ointments. The term also includes dispersion products of
cream consistency.

Preferably, the moisturising cream is present in the
20 composition at a level of at least 15%, more preferably
greater than 20%, more preferably greater than 25% by weight
of the antiperspirant composition.

The moisturising cream component of the composition can be
25 considered as the water, surfactant, hydrophobic phase, and
humectant components of the composition, or indeed any
components of the antiperspirant composition which are not
the antiperspirant active, perfume, preservative, and
optional ingredients (e.g. fillers, opacifiers) of the
30 composition

The cream in the composition can be of the oil in water type,
or water in oil. The cream in the composition should also be
35 stable, and to this end techniques used in the art can be
used to stabilize the cream. These include using high shear
in preparation, raising the temperature through the phase

inversion temperature and appropriately cooling, matching the HLB of the surfactant, and incorporating a lamellar phase.

5 Moisturising creams used in the compositions according to the invention are those which aid retention of water to plasticise outer layers of the epidermis to promote soft, smooth skin. If water is lost more rapidly from the stratum corneum that it is received from the lower layers of the epidermis, the skin becomes dehydrated and loses its
10 flexibility.

Moisturising creams used in compositions according to the invention may typically work by one or a combination of three main routes, namely occlusion, humectancy and restoration of
15 deficient materials. A given moisturising cream may act by any number of these three preferred routes.

Occlusion consists of reducing the rate of transepidermal water loss through old or damaged skin or in protecting
20 otherwise healthy skin from the effect of a drying environment. The second approach is to use humectants to attract water from the surrounding environment, thereby supplementing the skin's water content. The third approach is to determine the mechanism of the skin moisturisation
25 process, and supplement the skin in its deficiencies.

In compositions according to the invention, it is the moisturising cream component of the composition which provides a moisturising benefit. It is important that the
30 moisturising cream element of the composition provide the moisturisation benefit. Cream compositions can be modified to improve their moisturisation by known techniques, including adding humectants, lipids, hydrophobic ingredients, or other ingredients which counteract any drying effect they
35 may have.

The composition according to the invention comprises an antiperspirant active. Examples of suitable actives include aluminium salts, zirconium salts, aluminium and/or zirconium complexes, for example aluminium halides, aluminium hydroxy halides, zirconyl oxyhalides, zirconyl hydroxyhalides, and mixtures thereof. Specific examples include activated aluminium chlorohydrate, aluminium chlorohydrate, aluminium pentachlorohydrate and aluminium zirconiumchlorohydrate. Useful zirconium salts include zirconium hydroxy-chloride and zirconium oxychloride. Other generally used actives will be known to those skilled in the art. Preferred actives include AAZG (Activated Aluminium Zirconium Glycine), ZAG (Zirconium Aluminium Glycine), and AACH (Activated Aluminium Chorohydrate).

The amount of antiperspirant active present in the composition according to the invention is may be from 5-50% by weight of the composition, preferably from 10-40% by weight, more preferably 20-35% by weight of the composition. Alternatively the antiperspirant active may be present from 1.0 to 35%, preferably 5 to 30%, most preferably 10 to 25% of the total composition.

The deodorant active used in the cosmetics of the invention can be any deodorant active known in the art such as alcohols with the exception of ethanol, antimicrobial actives such as polyhexamethylene biguanides, non-microbiocidal deodorant actives such as triethylcitrate, bactericides and bacteriostatis.

The carrier material for the antiperspirant composition according to the invention can also comprise one or more of volatile carrier fluids, one or more of non-volatile emollients, and one or a combination of thickener and/or structurant materials if required.

5 The carrier fluid is selected according to the physical form of the cosmetic composition, e.g. volatile low viscosity silicones, low molecular weight hydrocarbons, alcohols with the exception of ethanol, and water, and can be selected by those skilled in the art to provide appropriate physical and sensory properties for the product.

10 The emollient, if used in the composition, may consist of a single emollient compound or a mixture of emollients, and can typically include fatty acids and fatty alcohol esters, slightly water soluble ethers and alcohols, hydrocarbons, water insoluble ethers, mineral oils and polyorganosiloxanes, and mixtures thereof.

15 The thickening or structurant agent, when required, is selected according to the product form of the cosmetic composition. It can be any of a number of compositions, including, for example, hydrogenated vegetable oil, hydrogenated castor oil, fatty acids, beeswax, paraffin wax, 20 silicone wax, fatty alcohols, polymers such as hydroxypropylcellulose, clays such as Bentone, natural or synthetic gums, or mixtures or combinations thereof.

25 The composition according to the invention can optionally comprise other ingredients, in addition to those already identified, depending on the nature and form of the finished product.

30 Other ingredients can also be included in the compositions of the invention and include surfactants, fillers, fragrances, preservatives and colouring agents for example. These ingredients are selected according to the physical and chemical from of the cosmetic composition.

35 Surfactants can comprise optionally up to 25%, more commonly up to 5% by weight of the total product, and are particularly

useful in formulating emulsion antiperspirant or deodorant compositions, for example for use as pump spray formulations. However for other product types, it is preferred that the composition contains less than about 8% by weight of surfactants. Non-ionic surfactants are particularly preferred.

Fillers can comprise up to about 20%, more commonly up to 10% of the total product and are normally less costly than the essential components of the invention, thereby reducing overall cost. Suitable fillers include aluminium stearate, aluminium tri-stearate, calcium stearate, talc or finely divided polyethylene, an example of which is ACUMIST B18.

Fragrances typically comprise up to about 1% of the total product.

Colouring agents and preservatives can be added as desired.

Other optional ingredients are other cosmetic adjuncts conventionally employed in antiperspirant or deodorant products.

The ingredients which can optionally be present in the composition carrier can conveniently form the balance of the composition.

The composition according to the invention can take any form of a product suited to or adapted for topical application to human skin, and is usually contained in a suitable holder or dispenser to enable it to be applied to the area of the skin, particularly the underarm, where control of perspiration and deodorancy is required. An important ingredient of the cosmetic compositions in the form of a pump-spray, stick and cream is a humectant such as glycerols and sorbitols.

EXAMPLES

5

Antiperspirant compositions according to the invention have been prepared using methods of manufacturing known in the art.

10

The invention is further illustrated by the non-limiting following examples.

EXAMPLE 1 ROLL-ON FORMULATION

15

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CHEMICAL NAME	% Active	% w/w
Cetyl Alcohol	100	2.00
Cetyl stearyl alcohol	100	3.00
Decyl Ester of Oleic acid	100	2.00
Glyceryl stearate	100	1.50
Blend of fragrance ingredients	100	1.00
Aluminum Chlorhydrate	50	34.5
Water	100	56.00
Total		100.00

25

The following test protocol was carried out on the formulation to determine its moisturising abilities of its cream component, which is further described in the context of example 12:

30

Test Protocol

10 volunteers were chosen. The measured skin sites were on the inner forearms of panellists who had not taken part in any test (involving their arms) for a period of one week previously. Two sites per arm of 20 sq cm were defined by indelible marks, and the products were applied twice a day according to the following protocol. Panellists applied one product ad lib over one site on each arm, the other site having no treatment. Measurements were made on these sites 5 hours later using the Corneometer, which relates to the skin elasticity, followed by the Derma Torque Meter (DTM), which relates to the skin hydration. Panellists re-applied the products after the measurements. Allocation of sites was balanced for left/right and upper/lower application. The test continued for 5 consecutive days.

N.B. Panellists were asked to avoid excessive use of shower gels, soaps etc. on the inner forearms and not to use body creams and moisturisers.

Results

The data below was derived from the analysis of variance. Treatment day was considered as a factor by including data from the previous day in the analysis.

DTM

FITTED ELASTIC CONSTANT (TORQUE OFF)					
Treatment	Day 1	Day 2	Day 3	Day 4	Day 5
Roll On Cream (Example 1)	1.905	1.958	1.901	1.819	1.752
No Treatment	1.650	1.647	1.690	1.663	1.631
Diff req'd for 95% sig.	0.200	0.148	0.144	0.124	0.107
sig of diff p=	0.000	0.000	0.000	0.000	0.000
No of People	10	10	10	10	10

CORNEOMETER

Treatment	Day 1	Day 2	Day 3	Day 4	Day 5
Roll On Cream (Example 1)	83.380	81.997	81.233	80.898	81.120
No Treatment	79.236	77.228	77.380	78.335	78.369
Diff req'd for 95% sig.	5.002	3.329	2.747	2.328	2.043
sig of diff p=	0.011	0.000	0.000	0.000	0.000
No of People	10	10	10	10	10

Conclusion

The following conclusions can be drawn from the studies.

a) The DTM results show that there is significant increase in the elasticity of the skin after one day compared to no treatment.

5 b) The Corneometer results show that there is a significant increase in the moisturisation of the stratum corneum after two days compared to no treatment.

10 It can be concluded that the antiperspirant gave significant improvement in the skin elasticity and moisturisation of the stratum corneum.

EXAMPLE 2

15 The following cream formulation for an antiperspirant pump was prepared :

	% Active
20 Mixture of glycerine monostearate, fatty alcohol, wax ester and ethoxylated fatty alcohol	18.00
Cetyl Stearyl Alcohol	4.00
Diocetyl cyclohexane	10.00
Dicapryl Ether	10.00
25 2-Phenoxyethanol	0.40
Glycerin	8.00
PEG-40 Hydrogenated Castor Oil	2.00
Water	To 100%

An identical test protocol to that described in Example 1 was carried out on Example 2.

The following results were obtained:

The data below was derived from the analysis of variance. Treatment day was considered as a factor by including data from the previous day in the analysis.

DTM

FITTED ELASTIC CONSTANT (TORQUE OFF)					
Treatment	Day 1	Day 2	Day 3	Day 4	Day 5
Pump Cream	2.084	2.083	2.122	2.137	2.148
No Treatment	1.744	1.730	1.720	1.745	1.755
Diff req'd for 95% sig.	0.174	0.114	0.103	0.091	0.081
sig of diff p=	0.000	0.000	0.000	0.000	0.000
No of People	10	10	10	10	9

CORNEOMETER

Treatment	Day 1	Day 2	Day 3	Day 4	Day 5
Pump Cream	96.410	96.418	95.630	96.365	96.888
No Treatment	82.770	81.802	80.620	80.954	81.843
Diff req'd for 95% sig.	3.132	2.037	2.240	1.900	1.778
sig of diff p=	0.000	0.000	0.000	0.000	0.000
No of People	10	10	10	10	9

Conclusions

The following conclusions can be drawn from the studies.

- a) The DTM results show that there is a significant increase in the elasticity of the skin with Example 2 after one day compared to no treatment.
- b) The Corneometer results show that there is a significant increases in the moisturisation of the stratum corneum after one day for Example 2 compared to no treatment.

It can be concluded that Example 2 gave a significant improvement in the skin elasticity and moisturisation of the stratum corneum.

The following examples also illustrate compositions of the invention with the moisturising components being defined in a separate column:

EXAMPLE 3 (moisturising cream suitable for a stick with and without glycerine)

	GLYCEROL	NO GLYCEROL
5 Stearyl Alcohol	17.2	23.4
Hydrogenated Castorwax Castor Oil	2.4	3.3
PEG-8 distearate	2.4	3.3
Polydecene	70.0	78.0
10 Glycerine	8.00	-

A suitable complete stick formulation is given in Example 8. The properties of these cream formulations are further described in the context of Example 10.

EXAMPLE 4 (moisturising cream for use in a Cream AP)

	% Active
20 Mineral Oil	4.00
Cetearyl alcohol	1.00
Decyl Oleate	2.00
2-Phenoxyethanol	0.40
25 Cetearyl Alcohol & Polyethylene Glycol Stearate	5.00
Titanium Dioxide	0.20
Glycerine	6.00
Water	to 100%

A suitable AP cream formulation is given in Example 7. The properties of this cream formulation are further described in the context of Example 9.

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EXAMPLE 5 (Pump Formulation)

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	Deodorant part % w/w	moisturising cream % w/w	total formulation % w/w
oil-in water surfactant mixture	-	5.5	5.5
emollient oils	5.0	5.0	10.0
PEG 40 hydrogenated castor oil	-	0.5	0.5
antiperspirant active solution	10.0	-	10.0
processing aid	2.0	-	2.0
preservative	-	0.1	0.1
humectant	-	2.0	2.0
perfume	0.8	-	1.0
water	57.2	11.9	69.1
total	75.0	25.0	100.0

A preferred outline pump composition containing moisturising cream comprises 3-7% surfactant, 8-15% emollient oils, 5-15% antiperspirant active, and 60-80% water.

EXAMPLE 6 (Roll-On Formulation)

	Deodorant part	moisturising	total
	% w/w	cream	formulation
		% w/w	% w/w
5 antiperspirant	35.0	-	35.0
active			
solution			
thickener	1.0	1.0	2.0
emulsifier	2.0	2.5	4.5
mixture			
10 emollient oil	-	1.5	1.5
preservative	-	0.1	0.1
perfume	1.0	-	1.0
water	37.0	19.9	55.9
15 total	75.0	25.0	100.0

A preferred outline roll on lotion composition comprises 30-40% antiperspirant active, 2-8% emulsifier, 0.5-5% emollient oil, and 50-60% water.

EXAMPLE 7 (AP Cream Formulation)

	Deodorant part	moisturising cream	total formulation
	% w/w	% w/w	% w/w
emollient oil	-	1.0	1.0
antiperspirant active solution	30.0	-	30.0
thickener	0.75	0.25	1.0
emulsifying agents	10.75	1.75	12.5
preservative	-	0.2	0.2
opacifier	0.2	-	0.2
humectant	-	1.5	1.5
perfume	1.0	-	1.0
water	32.3	20.3	52.6
total	75.0	25.0	100.0

A preferred outline cream composition comprises 0.5-5% emollient oil, 25-35% antiperspirant active, 10-15% emulsifier, and 45-60% water.

EXAMPLE 8 (Stick AP Formulation)

	Deodorant part	moisturising	total
	% w/w	cream	formulation
		% w/w	% w/w
carrier oil	32.0	-	32.0
antiperspirant active	25.0	-	25.0
emollient oil	-	17.5	17.5
structuring agent	10.2	4.3	14.5
processing aid	1.4	0.6	2.0
emulsifying agent	1.4	0.6	2.0
skin feel modifier	4.0	-	4.0
perfume	1.0	-	1.0
humectant	-	2.0	2.0
total	75.0	25	100.0

Comparative experiments as previously described were carried out on Examples 3 to 8.

Results

The data below was derived from the STAVERA1 analysis (analogous to a T test) of variance. Treatment day was

considered as a factor by including data from the previous day in the analysis.

EXAMPLE 9 (with and without glycerol)

5

DTM

10

15

FITTED ELASTIC CONSTANT (TORQUE OFF)					
Treatment	Day 1	Day 2	Day 3	Day 4	Day 5
No Glycerol	2.038	2.039	2.127	2.200	2.204
Glycerol	2.300	2.226	2.350	2.388	2.409
No Treatment	1.895	1.925	2.039	2.049	2.093
Diff req'd for 95% sig.	0.272	0.217	0.189	0.168	0.147
sig of diff p=	0.016	0.020	0.004	0.000	0.000
No of People	8	10	10	10	8

CORNEOMETER

5

10

Treatment	Day 1	Day 2	Day 3	Day 4	Day 5
No Glycerol	77.605	80.089	80.727	80.997	81.650
Glycerol	84.532	86.801	89.393	89.920	90.328
No Treatment	74.015	76.050	77.880	78.237	79.137
Diff req'd for 95% sig.	4.064	2.920	2.764	2.534	2.257
sig of diff p=	0.000	0.000	0.000	0.000	0.000
No of People	9	10	10	10	10

EXAMPLE 10 (Cream AP)

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DTM

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FITTED ELASTIC CONSTANT (TORQUE OFF)					
Treatment	Day 1	Day 2	Day 3	Day 4	Day 5
Cream	2.209	2.124	2.172	2.225	2.271
No Treatment	1.925	1.793	1.867	1.841	1.855
Diff req'd for 95% sig.	0.168	0.119	0.092	0.082	0.078
sig of diff p=	0.002	0.000	0.000	0.000	0.000
No of People	9	10	10	10	10

CORNEOMETER

Treatment	Day 1	Day 2	Day 3	Day 4	Day 5
Cream	93.146	93.734	94.351	95.467	96.068
No Treatment	81.293	80.927	81.327	81.681	81.735
Diff req'd for 95% sig.	4.311	3.619	2.667	2.327	2.028
sig of diff p=	0.000	0.000	0.000	0.000	0.000
No of People	9	10	10	10	10

In all the examples, moisturisation is deemed only to have occurred if there has been an increase in skin elasticity as measured by the DTM test, and also an increase in skin hydration as measured by the corneometer, relative to an untreated site.

Conclusions

The following conclusions can be drawn from the studies.

Cream of Example 9.

a) The DTM results show that there is a significant increase in the elasticity of the skin for the cream after one day compared to no treatment.

b) The Corneometer results show that there is a significant increase in the moisturisation of the stratum corneum after one day for the cream compared to no treatment.

It can be concluded that the "moisturising cream" gives significant improvement in the skin elasticity and moisturisation of the stratum corneum.

Cream of Example 10.

5 a) The DTM results show that there is a significant increase in the elasticity of the skin after one day for the cream with glycerol compared to no treatment. The cream without glycerol shows an upward trend but this is not significant at the 95% level.

10 b) The Corneometer results show that there is a significant increase in the hydration of the stratum corneum after one day for the cream with glycerol and after 2 days for the cream without glycerol compared to no treatment.

15 c) The cream with glycerol is significantly better than the cream without glycerol in increasing the skin elasticity and moisturisation of the stratum corneum after one day.

20 It can be concluded that the cream containing glycerol provides a moisturising effect as defined, whereas the cream which does not contain the glycerol does not provide a moisturisation effect.

EXAMPLE 11

25 The following cream was formulated according to a standard emulsion manufacturing process.

30

35

Component	weight %
mineral oil	4.0
cetearyl alcohol	4.75
glyceryl stearate	2.0
phenoxyethanol	0.4
PEG-20 stearate	1.25
glycerol	6.0
titanium dioxide	0.2
water	81.4
	100

The above cream was shown to be moisturising *in-vivo* as it increased the skin elasticity as measured by DIASTRON Dermal Torque Meter, and the skin hydration as measured using a Corneometer CM 820 PC Skin Hygrometer after one day compared to no treatment on a five day test protocol. The increase in skin elasticity and skin hydration versus untreated area were significant at 95% confidence level after one day.

Antiperspirant cream compositions were formulated containing 25% and 50% of the above moisturising cream, and were found to give good cosmetic properties and be very mild on the skin. In this moisturising cream composition, the presence of the humectant (ie glycerol) was found to be very important to the cream's moisturising properties.

EXAMPLE 12

The following cream was formulated according to the same protocol as described in relation to example 11.

component	weight %
ceteareth-20	6.0
cetyl alcohol	4.0
glyceryl stearate	4.0
decyl oleate	6.0
water	80.0
	100.0

The above cream was shown to be moisturising *in-vivo* as it increased the skin elasticity as measured by DIASTRON Dermal Torque Meter, and the skin hydration as measured using a Corneometer CM 820 PC Skin Hygrometer after one day compared to no treatment on a five day test protocol. The increase in skin elasticity and skin hydration versus untreated area were significant at 95% confidence level after one day.

An antiperspirant composition suitable for a roll-on applicator was formulated containing 25% of the above moisturising cream and found to give excellent wetness and odour control as well good cosmetic and aesthetic properties such as comfort in use, smoothness on application and non-sting on application.

EXAMPLE 13

The following creams, which moisturise by occlusion, were formulated according to the following protocol. All ingredients were heated to 75°C. The cream texture was obtained by using a high shear homogeniser as the formulated product is cooling, providing a flowable product.

component	weight %		
	cream 1	cream 2	cream 3
stearyl alcohol	17.2	17.2	21.2
PEG-8 distearate	2.4	2.4	2.9
hydrogenated castor oil	2.4	2.4	2.9
volatile silicone	78.0	68.0	-
polydecene	-	-	73.0
petroleum jelly	-	10.0	-
Total	100.0	100.0	100.0

The moisturising properties of the above creams were determined by measuring the occlusion properties of the creams, i.e the creams are moisturising if they induce a significant reduction in the Trans Epidermal Water Loss (TEWL). An *in-vitro* TEWL method was used to assess the above creams. The cream needed to reduce the TEWL by a minimum of 15% to be moisturising.

Cream 1 gave a TEWL reduction of 2.5%; cream 2 of 19.4%; and cream 3 of 42.8%.

Cream 1 does not give moisturising benefits, whilst creams 2 & 3 are moisturising.

Antiperspirant compositions suitable for a stick applicator were formulated, one containing 15% of the moisturising cream 2 and one containing 50% of the moisturising cream 3. Both compositions were found to give excellent wetness and odour control as well good cosmetic and aesthetic properties such

as comfort in use, smoothness on application and non-sting on application.

CLAIMS

1. An antiperspirant or deodorant cosmetic composition
suitable for topical application to the human skin,
5 comprising:
 - i. an antiperspirant or deodorant active;
 - ii. a moisturising cream; and optionally
 - iii. a carrier for the antiperspirant or deodorant
active.
- 10 2. A cosmetic composition according to claim 1 wherein the
composition is an antiperspirant composition.
- 15 3. A cosmetic composition according to claim 2, wherein the
antiperspirant active comprises 1 to 35% by weight of
the total composition.
- 20 4. A cosmetic composition according to any one of the
preceding claims, wherein the composition is free of any
short chain monohydric alcohol.
5. A cosmetic composition according to claim 4, wherein the
short chain monohydric alcohol is ethanol.
- 25 6. A cosmetic composition according to any one of the
preceding claims, wherein the composition comprises at
least 40% by weight of water.
- 30 7. A cosmetic composition according to any one of the
preceding claims, wherein the moisturising cream
comprises a humectant.
- 35 8. A cosmetic composition according to claim 7, wherein the
humectant comprises 1 to 50% by weight of the total
composition.

9. A cosmetic composition according to claim 7 or claim 8, wherein the humectant is sorbitol, glycerol, ethylene glycol, propylene glycol, or mixtures thereof.
- 5 10. A cosmetic composition according to any one of the preceding claims, wherein the moisturising cream is a solid or semi-solid emulsion.
- 10 11. A cosmetic composition according to any one of the preceding claims, additionally comprising a volatile carrier.
- 15 12. A cosmetic composition according to any one of the preceding claims, additionally comprising a non volatile emollient.
- 20 13. A cosmetic composition according to claim 11, wherein the non volatile emollient comprises fatty acids or fatty alcohol esters, slightly water soluble ethers or alcohols, hydrocarbons, water insoluble ethers, mineral oils and polyorganosiloxanes, or mixtures thereof.
- 25 14. A cosmetic composition according to any one of the preceding claims, additionally comprising a structurant.
- 30 15. An antiperspirant or deodorant composition suitable for topical application to the human skin, comprising:
i. 1-25% by weight of the total composition of an antiperspirant or deodorant active;
ii. 1 to 90% by weight of the total composition of water; and
iii. 0.1 to 95% by weight of a moisturising cream.
- 35 16. A cosmetic composition according to any of the preceding claims, wherein the composition is a pump spray composition and comprises 3-7% surfactant, 8-15%

emollients oils, 5-15% antiperspirant active and 60-80% water.

- 5 17. A cosmetic composition according to any of the preceding claims, wherein the composition is a roll on lotion composition and comprises 30-40% antiperspirant active, 2-8% emulsifier, 0.5-5% emollient oil and 50-60% water.
- 10 18. A cosmetic composition according to any of the preceding claims, wherein the composition is a cream composition and comprises 0.5-5% emollient oil, 25-35% antiperspirant active, 10-15% emulsifier and 45-60% water.

Internal Application No
PCT/EP 97/03109

According to International Patent Classification (IPC) or to both national classification and IPC

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 235 458 A (R.P.MESSINA) 15 February 1966 see claim 1 see examples 1-7 ---	1-10,12, 13,15,18
X	EP 0 373 499 A (GOLGATE-PALMOLIVE) 20 June 1990 see claims 1-9 see examples 1-3 ---	1-5, 7-15,18
X	WO 95 18598 A (PHYLOMED) 13 July 1995 see claims 1-4,6,7 see page 3, line 10-16 ---	1-15,18

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

- *A* document defining the general state of the art which is not considered to be of particular relevance
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 97/03109

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	EP 0 000 604 A (PROCTER & GAMBLE) 7 February 1979 see claims 1-5 see examples 1,2 ---	1-5, 7-10, 12-15
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P,X	DE 195 30 220 A (HENKEL) 20 February 1997 see claims 1,3,7 see examples 3-5 see page 3, line 11-28 see page 4, line 57-67 -----	1-16

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Information on patent family members

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